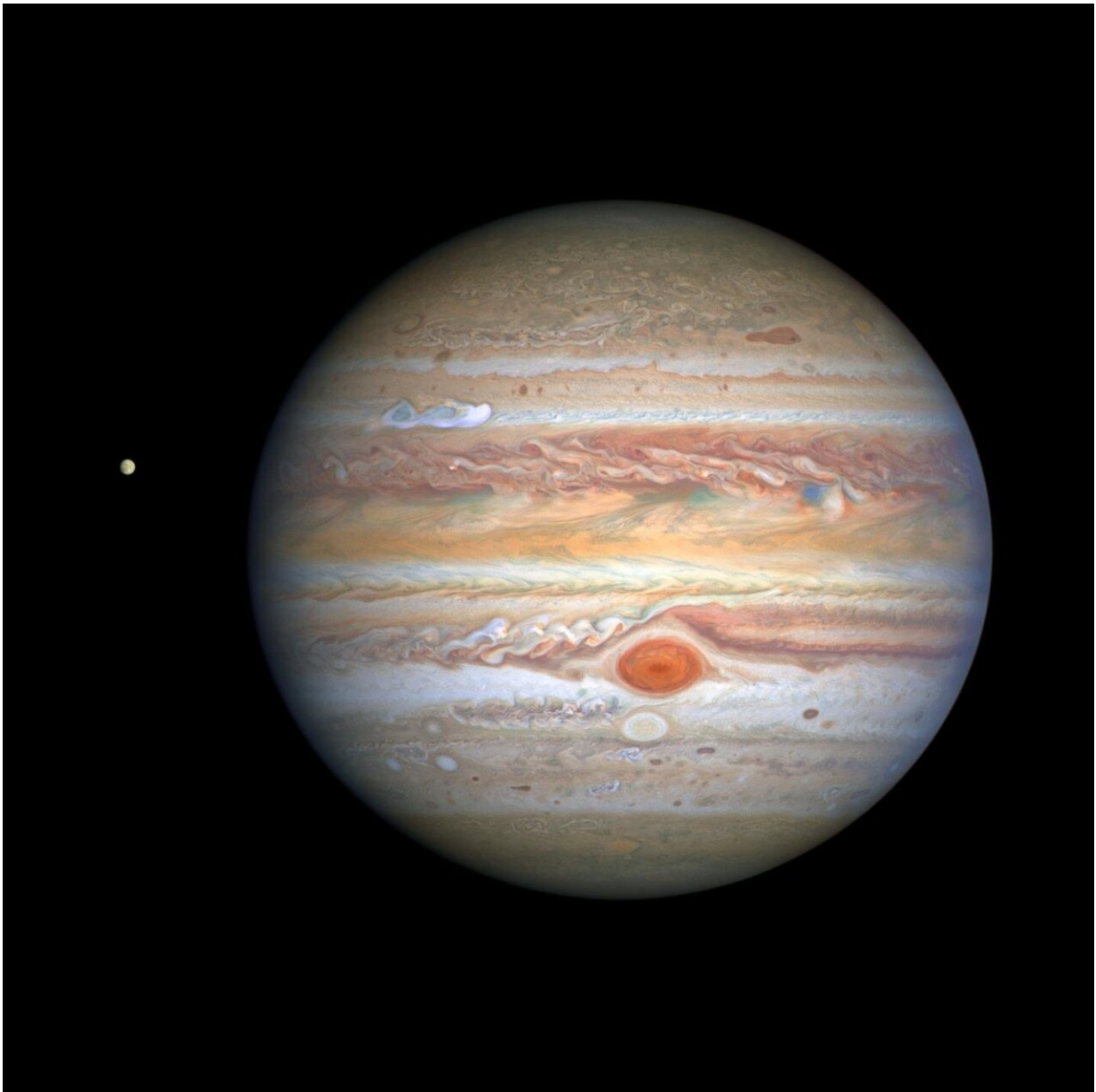


# Hubble captures crisp new portrait of Jupiter's storms

September 17 2020

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This latest image of Jupiter, taken by NASA's Hubble Space Telescope on Aug. 25, 2020, was captured when the planet was 406 million miles from Earth. A unique and exciting detail of Hubble's snapshot appears at mid-northern latitudes as a bright, white, stretched-out storm traveling around the planet at 350 mph. Hubble shows that the Great Red Spot, rolling counterclockwise in the planet's southern hemisphere, is plowing into the clouds ahead of it, forming a cascade of white and beige ribbons. Jupiter's icy moon Europa, thought to hold potential ingredients for life, is visible to the left of the gas giant. Credit: NASA, ESA, STScI, A. Simon (Goddard Space Flight Center), M.H. Wong (University of California, Berkeley), and the OPAL team

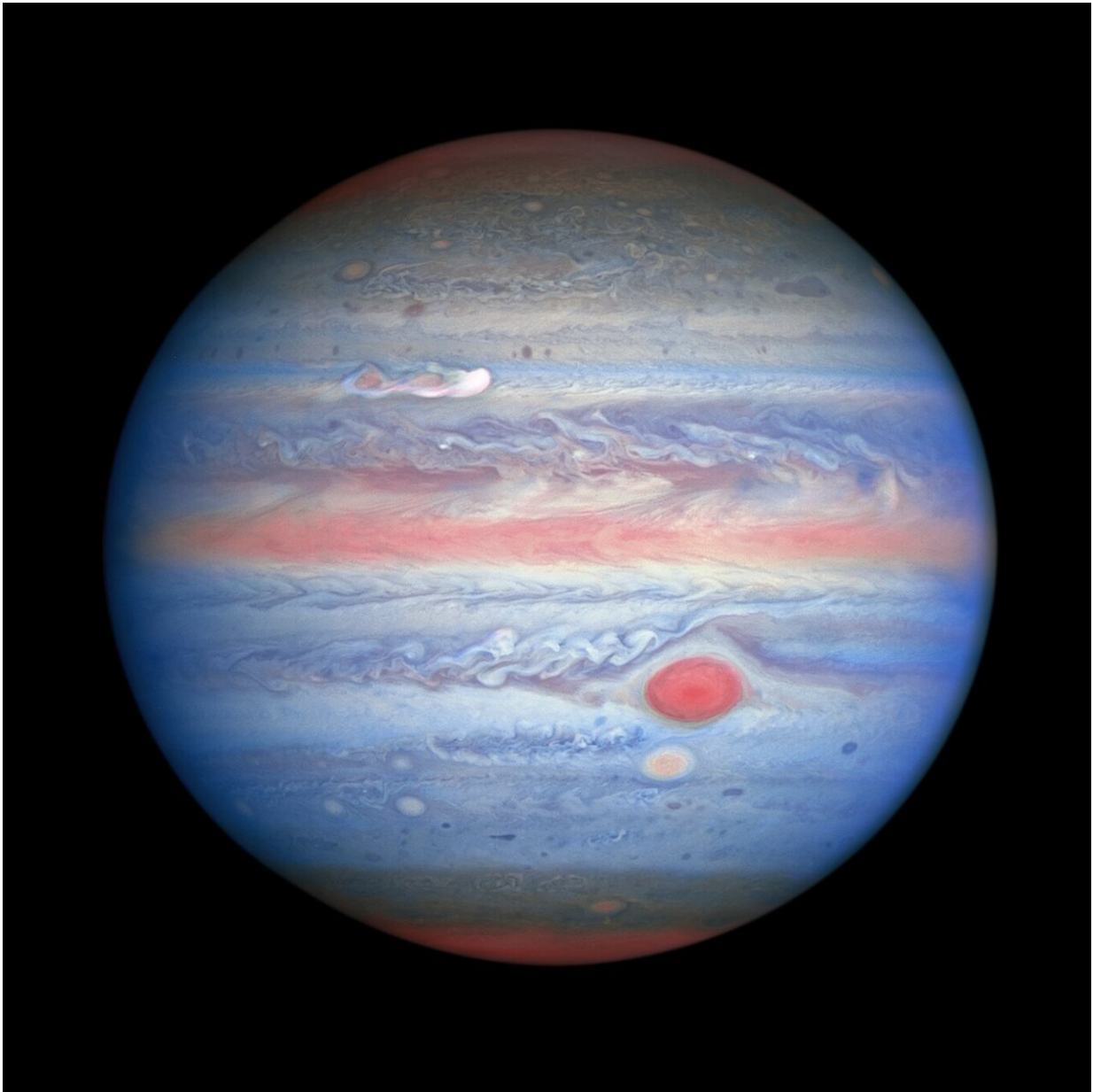
This latest image of Jupiter, taken by NASA's Hubble Space Telescope on Aug. 25, 2020, was captured when the planet was 406 million miles from Earth. Hubble's sharp view is giving researchers an updated weather report on the monster planet's turbulent atmosphere, including a remarkable new storm brewing, and a cousin of the famous Great Red Spot region gearing up to change color—again.

A unique and exciting detail of Hubble's snapshot appears at mid-northern latitudes as a bright, white, stretched-out storm traveling around the planet at 350 miles per hour (560 kilometers per hour). This single plume erupted on Aug. 18, 2020—and ground-based observers have discovered two more that appeared later at the same latitude.

While it's common for storms to pop up in this region every six years or so, often with multiple storms at once, the timing of the Hubble observations is perfect for showing the structure in the wake of the disturbance, during the early stages of its evolution. Trailing behind the plume are small, rounded features with complex "red, white, and blue" colors in Hubble's ultraviolet, visible, and near-infrared light image. Such discrete features typically dissipate on Jupiter, leaving behind only changes in cloud colors and wind speeds, but a similar storm on Saturn

led to a long-lasting vortex. The differences in the aftermaths of Jupiter and Saturn storms may be related to the contrasting water abundances in their atmospheres, since water vapor may govern the massive amount of stored-up energy that can be released by these storm eruptions.

Hubble shows that the Great Red Spot, rolling counterclockwise in the planet's southern hemisphere, is plowing into the clouds ahead of it, forming a cascade of white and beige ribbons. The Great Red Spot is currently an exceptionally rich red color, with its core and outermost band appearing deeper red.



An image of Jupiter taken by NASA's Hubble Space Telescope in ultraviolet, visible, and near-infrared light on Aug. 25, 2020, is giving researchers an entirely new view of the giant planet and offers insights into the altitude and distribution of the planet's haze and particles. This complements Hubble's visible-light pictures that show the ever-changing cloud patterns. In this photo, the parts of Jupiter's atmosphere that are at higher altitude, especially over the poles, look red from atmospheric particles absorbing ultraviolet light. Conversely, the blue-hued areas represent the ultraviolet light being reflected off the planet. A new storm at upper left, which erupted on Aug. 18, 2020, is grabbing the attention of

scientists in this image. The "clumps" trailing the white plume appear to be absorbing ultraviolet light, similar to the center of the Great Red Spot, and Red Spot Jr. directly below it. This provides researchers with more evidence that this storm may last longer on Jupiter than most storms. Credit: NASA, ESA, STScI, A. Simon (Goddard Space Flight Center), M.H. Wong (University of California, Berkeley), and the OPAL team

Researchers say the Great Red Spot now measures about 9,800 miles across, big enough to swallow Earth. The super-storm is still shrinking as noted in telescopic observations dating back to 1930, but the reason for its dwindling size is a complete mystery.

Another feature researchers are noticing has changed is Oval BA, nicknamed by astronomers as Red Spot Jr., which appears just below the Great Red Spot in this image. For the past few years, Red Spot Jr. has been fading in color to its original shade of white after appearing red in 2006. However, now the core of this [storm](#) appears to be darkening slightly. This could hint that Red Spot Jr. is on its way to turning to a color more similar to its cousin once again.

Hubble's image shows that Jupiter is clearing out its higher altitude white clouds, especially along the planet's equator, where an orangish hydrocarbon smog wraps around it.

The icy moon Europa, thought to hold potential ingredients for life, is visible to the left of the gas giant.

This Hubble image is part of yearly maps of the entire planet taken as part of the Outer Planets Atmospheres Legacy program, or OPAL. The program provides annual Hubble global views of the outer [planets](#) to look for changes in their storms, winds, and clouds.

Provided by NASA's Goddard Space Flight Center

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